

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	George R. Cameron, Hucichian Huang		
Assignee:	3PAR, Inc.		
Title:	Time and Space Efficient Technique for Creating Virtual Volume Copies		
Serial No.:	10/655,951	Filing Date:	September 4, 2003
Examiner:	Shahid Al Alam	Group Art Unit:	2162
Docket No.:	M-8497 US (3PD-M-8497 US)	Confirmation No.	8894

San Jose, California
August 12, 2008

Mail Stop Appeal Brief - Patents
Under Secretary of Commerce for Intellectual Property and Director of the
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

REPLY BRIEF TO EXAMINER'S ANSWER

Dear Sir:

This responds to the June 12, 2008 Examiner's Answer. Applicant respectfully requests consideration of the following arguments.

Claim 1

In the April 2, 2008 Appeal Brief, Applicant argued that the reference "File System Design for an NFS File Server Appliance" by Dave Hitz et al (hereafter "Hitz et al.") does not disclose a snapshot descending from another snapshot. Addressing Applicant's arguments in the June 12, 2008 Examiner's Answer, the Examiner stated in part:

Appellants specification teaches the term "descend" in paragraphs [0007, 0018, 0088 and 0101] where appellants' teaches of using a tree structure having a base volume which is similar to Hitz's root inode.

Hitz discloses that a file system (or a snapshot) can be a descend from another file system (or another snapshot) and Hitz disclose a snapshot tree structure having a first snapshot that descends from a base volume and a second snapshot that descends from the first snapshot. In response to applicant's

argument, Hitz's teachings of the WAFL system, where the WAF file system is a tree of blocks with the root inode similar to Applicant's tree structure, which describes the inode file, at the top, and meta-data files and regular files underneath (see Figures 1 and 2).

June 12, 2008 Examiner's Answer, p. 8. Applicant respectfully traverses.

Applicant submits that the root inode of Hitz et al. is dissimilar from the base volume recited in claim 1. The root inode is a special inode that describes the inode file, which contains the inodes that describe the rest of the files in the file system. Hitz et al., p. 9. Unlike the other inodes that can be written to any blocks on a disk, the root inode must be stored at a fixed location on the disk so the WAFL can boot. Id., p. 9. Thus, the root inode is a special file on a disk; it is not a file system, a snapshot, or a volume of any kind.

Applicant submits that the tree of blocks in the WAFL file system of Hitz et al. is dissimilar from the tree structure of snapshots and base volume of claim 1. The tree of blocks in the WAFL file system organizes blocks for storing inodes and data. Figs. 3 and 4 of Hitz et al. show that the root inode for the tree of blocks is on the same level as the snapshot for the tree of blocks (initially a duplicate copy of the root inode). On the other hand, the tree structure of claim 1 organizes snapshots and base volume so a first snapshot descends from a base volume, and a second snapshot descends from the first snapshot.

For all the above reasons, claim 1 is patentable over Hitz et al.

Claims 2 to 5

Claims 2 to 5 depend from claim 1 and are patentable over Hitz et al. for at least the same reasons as claim 1.

Claims 6 to 10

Claim 6 is a method claim that parallels apparatus claim 1. Thus, claim 6 is patentable over Hitz et al. for at least the same reasons as claim 1.

Claims 7 to 10 depend from claim 6 and are patentable over Hitz et al. for at least the same reasons as claim 6.

Claims 11 to 14

Claim 11 recites searching for a data block in a second snapshot, which descends from a first snapshot, which descends from a base volume, and, when the data block is not in the second snapshot, searching for the data block in the first snapshot. As described above, Hitz et al. does not disclose a snapshot descending from another snapshot. Accordingly, claim 11 is patentable over Hitz et al.

Claims 12 to 14 depend from claim 11 and are patentable over Hitz et al. for at least the same reasons as claim 11.

CONCLUSION

Applicant respectfully submits the Examiner has failed to show that the cited references disclose all the recited elements of claims 1 to 14. Accordingly, Applicant requests the rejections of claims 1 to 14 to be reversed.

I hereby certify that this correspondence is being transmitted prior to expiration of the set period of time by being transmitted via the Office electronic filing system in accordance with § 1.6(a) (4).

/David C Hsia/
Signature

August 12, 2008
Date

Respectfully submitted,

/David C Hsia/

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